# Selection for nutrients by red deer hinds feeding on a mixed forest edge

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| Résumé en anglais | We studied the nutritional behaviour of hinds foraging on a mixed-forest edge by direct observation of their choices at each season and by measuring nutrient concentration in the plants. We compared nutrient concentrations in the observed diets with those in the total available vegetation, and with those of 1,000 randomly simulated diets in which we included only those plants that were actually eaten by the animal. Whether the available or the consumed feeds were used as the basis for comparisons had important consequences due to the presence of conifers and ferns, which were high in soluble sugars but were never eaten by the animals (potentially due to their toxicity). The selected diets were lower in sugars than the total available vegetation in summer, but were actually higher in sugars than the random diets generated from consumed forage species only. Hind diets contained more soluble sugars but not more protein than simulated diets in all seasons. Contrary to our prediction, anti-nutritional compounds (ADL and tannins) were avoided only in winter. Compared to simulated diets, hinds consumed more tannins in spring and summer and more ADL in summer and autumn. We suggest that this was a consequence of selection for soluble sugars, because the preferred plant species, which had high soluble sugar concentrations, also contained a large proportion of the anti-nutritional compounds eaten. In winter, the grass-dominated diets contained more Wbre (NDF) and less ADL than the simulated diets, indicating that hinds orient their feeding towards digestible Wbres. The switch from a browser to a grazer diet was related to a change in the availability of the nutrients, mainly soluble sugars. In our study, grasses contained more soluble sugars and proteins than deciduous browse during winter. This calls into question the dichotomy usually assumed in the literature between grass and browse in terms of nutrient content. |

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